## ABSTRACT OF THE INVENTION

The present invention relates to a method of forming a quantum wire gate device. The method includes patterning a first oxide upon a substrate. Preferably the first oxide pattern is precisely and uniformly spaced to maximize quantum wire numbers per unit area. The method continues by forming a first nitride spacer mask upon the first oxide and by forming a first oxide spacer mask upon the first nitride spacer mask. Thereafter, the method continues by forming a second nitride spacer mask upon the first oxide spacer mask and by forming a plurality of channels in the substrate that are aligned to the second nitride spacer mask. A dielectric is formed upon the channel length and the method continues by forming a gate layer over the plurality of channels. Because of the inventive method and the starting scale, each of the plurality of channels is narrower than the mean free path of semiconductive electron flow therein.

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